

TABLE 1.—*Solar radiation intensities during December, 1917—Continued.*

[Gram-calories per minute per square centimeter of normal surface.]

Lincoln, Nebr.											
Date.	Sun's zenith distance.										
	0.0°	48.3°	60.0°	66.5°	70.7°	73.6°	75.7°	77.4°	78.7°	79.8°	
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	
A. M. Dec. 8 11 16 20 27	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	
	1.42	1.38	1.23	1.21	1.12	1.02					
	1.26	1.21	1.12								
	1.30	1.19									
	1.20	1.15	1.07	0.99	0.93	0.86	0.80				
	1.08		0.81								
Monthly means				1.25	1.23	1.06	(1.00)	(0.93)	(0.86)	(0.80)	
Departure from 3-year normal				-0.04	-0.01	-0.06	-0.01	-0.03	±0.00		
P. M. Dec. 8 18 27				1.15	1.10	1.06	1.15				
				0.98	0.95	0.92	0.99	0.85			
Monthly means				(1.15)	1.11	1.07	(1.04)	(0.89)	(0.85)		
Departure from 3-year normal				-0.12	-0.08	-0.06	-0.05	-0.16	-0.13		

## Santa Fe, N. Mex.

Santa Fe, N. Mex.											
Date.	A. M.	P. M.	Dec.	7	20	27	28	29	30	31	31
				1.47	1.36	1.46	1.46	1.39	1.38	1.30	1.28
								1.39	1.33	1.26	1.22
								1.26	1.20	1.18	1.15
Monthly means				1.46	1.37	1.31	1.25	1.20	(1.14)	(1.15)	
Departure from 6-year normal				-0.04	-0.05	-0.05	-0.05	-0.04	-0.03	-0.01	
P. M. Dec. 3 6 19 27 28 31				1.43	1.36	1.30	1.50	1.30	1.20	1.21	
				1.48			1.50	1.38	1.24	1.17	
							1.50	1.31	1.24	1.10	
							1.47	1.38	1.28	1.18	
Monthly means				1.46	1.37	1.27	1.24	1.20	1.13	1.05	(0.97)
Departure from 2-year normal				-0.22	-0.03	-0.01					

TABLE 2.—*Vapor pressures at pyrheliometric stations on days when solar radiation intensities were measured.*

Washington, D. C.			Madison, Wis.			Lincoln, Nebr.			Santa Fe, N. Mex.		
Dates.	8 a.m.	8 p.m.	Dates.	8 a.m.	8 p.m.	Dates.	8 a.m.	8 p.m.	Dates.	8 a.m.	8 p.m.
1917. Dec. 9	mm. 0.74	mm. 1.07	1917. Dec. 6	mm. 1.19	mm. 1.32	1917. Dec. 8	mm. 0.41	mm. 0.74	1917. Dec. 3	mm. 3.45	mm. 2.82
10 11 15 26 30	0.71 0.97 1.19 1.45 0.53	1.19 1.32 1.33 1.98 0.71	14 21 22 25 29	0.97 3.15 2.11 0.48 0.41	0.81 2.08 4.37 0.88 0.66	11 16 18 20 27	0.71 1.78 3.81 4.57 2.26	1.38 3.98 4.57 4.37 0.71	6 7 19 20 27	1.45 2.16 2.62 2.16 3.45	2.49 2.48 3.63 3.00 3.15

TABLE 3.—*Daily totals and departures of solar and sky radiation during December, 1917.*

[Gram-calories per square centimeter of horizontal surface.]

Day of month.	Daily totals.		Departures from normal.		Excess or deficiency since first of month.	
	Wash- ington.	Madison.	Wash- ington.	Madison.	Wash- ington.	Madison.
	1917.	calories.	calories.	calories.	calories.	calories.
Dec. 1	152	176	-28	43	-28	43
2	248	58	70	-74	42	-31
3	70	166	-106	35	-64	4
4	24	93	-150	-37	-214	-33
5	190	105	18	-25	-196	-58
6	137	229	-33	99	-229	41
7	74	166	-95	36	-324	77
8	15	209	-152	79	-476	156
9	288	199	123	69	-353	225
10	272	219	108	89	-245	314
Dec. 11	227	200	65	69	-180	383
12	167	99	6	-32	-174	381
13	60	209	-100	78	-274	429
14	71	212	-59	80	-363	509
15	221	160	62	28	-301	537
16	115	132	-44	-1	-345	538
17	130	171	-29	38	-374	574
18	92	35	-67	-99	-441	475
19	66	34	-93	-100	-534	375
20	184	26	25	-109	-509	266
Decade departure.					-264	-48
Dec. 21	197	191	38	56	-471	322
22	208	112	48	-24	-423	298
23	207	20	47	-116	-376	182
24	109	86	-51	-51	-427	131
25	20	198	-140	61	-567	192
26	218	121	58	-17	-509	175
27	171	41	10	-98	-499	77
28	168	93	7	-42	-492	35
29	122	211	-39	70	-531	105
30	268	59	107	-83	-424	22
31	190	161	28	18	-396	40
Decade departure.					+113	-226
Excess or deficiency/cal since first of year/ per cent					-7,164	+187
					-5.6	+0.2

LUNAR TOTAL ECLIPSE, 1917, JULY 4.<sup>1</sup>

By L. PICARD.

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Observations by three persons during the lunar eclipse of 1917, July 4, at the Bordeaux-Floriac observatory, indicated that the edges of the moon's limb appeared much brighter than the central portions. Also that the northern limb appeared much brighter than the southern, the moon passing to the north of the axis of the shadow cone; and that the western limb was most luminous until the middle of the eclipse, and the eastern limb during the second half of the eclipse. These facts indicate that the phenomenon is due to the solar rays being refracted on passage through the terrestrial atmosphere.—C. P. B[uller].

523.38 (964) —

## LUNAR TOTAL ECLIPSE OF DECEMBER 27-28, 1917, AT HONOLULU.

By G. A. REICHELT, Assistant Observer.

[Dated: Weather Bureau Office, Honolulu, Hawaii, Dec. 30, 1917.]

A total eclipse of the moon, remarkable for the brightness of the moon during the eclipse period and also for the attending corona visible, was observed at Honolulu, Hawaii, on the night of December 27, 1917.

The eclipse as seen by the naked eye began at about 9:35 p. m. (157° 31' meridian time), was total from 11:10

<sup>1</sup> Comptes rendus, Paris, Aug. 13, 1917, 165:264.